The sialic acid/glycosaminoglycan ratio was determined in 35 coronary artery ectasia patients and 35 control subjects to determine the possible role of fluoride in the etiology of the disease. The coronary artery ectasia patients and controls were selected from subjects who underwent coronary angiography. The mean serum sialic acid level was significantly lower in patients with coronary artery ectasia (CAE) than in controls (340.3± 28.6 vs. 427.0±15.9 μg/mL, respectively; p<0.001). The mean serum glycosaminoglycan level was significantly higher in patients with CAE than in controls (5,013.1±158.6 vs. 3,833.6±237.1 μg/mL, respectively; p<0.001). The sialic acid/glycosaminoglycan ratio in patients with coronary artery ectasia was significantly lower than in controls (0.068±0.007 vs. 0.111±0.005; p<0.001). There was more than 38.7% reduction in this ratio in patients with CAE when compared with controls. We demonstrated that chronic fluoride exposure has an important role in the pathogenesis of coronary artery ectasia.